

# **NUTRITIONAL NEEDS OF INDIVIDUALS AND FAMILIES ACROSS THE LIFESPAN**

## **Nutrition Issues and Adolescents**

**Grade Levels: 9-12**

**Concept:** Sports Nutrition

**Comprehensive Standard:** 6.2 Evaluate the nutritional needs of individual and families in relation to health and wellness across the lifespan

**Technical Standard:** 6.2.1 Analyze the effect of nutrients on health, appearance, job performance, and personal/family life  
6.2.2 Examine the relationship of nutrition and wellness to individual and family health throughout the life span

### **LESSON COMPETENCIES:**

- ? Explore the role of nutrition in athletic performance
- ? Define carbohydrate-loading
- ? Assess the role of sports drinks versus water
- ? Plan nutritionally adequate training diets
- ? Discuss the effects of performance enhancement supplements

### **Anticipated Behavioral Outcomes:**

- ? Athletes choose foods from the Food Guide Pyramid in planning pre- and post- competition meals.
- ? Athletes avoid questionable substances to enhance athletic performance.

### **Resources Needed:**

- Copies of handouts for all students
- Internet access for all students

### **References for teachers and students:**

West, D. (2000). *Nutrition and Fitness: Lifestyle Choices for Wellness*. Goodheart-Wilcox Publishing, [www.goodheartwilcox.com](http://www.goodheartwilcox.com) or phone at 1-800-323-0440  
Chapter 16, *Eating for Sports Performance*, pp. 274-284

*Sports & Nutrition - the winning connection*, an educational web site at [www.urbanext.uiuc.edu/hsnut/index.html](http://www.urbanext.uiuc.edu/hsnut/index.html)

Several articles in a series on nutrition and the athlete are available at the *Nebraska Cooperative Extension Service* website at [www.ianr.unl.edu/pubs/foods/index.htm](http://www.ianr.unl.edu/pubs/foods/index.htm)

Another website with nutrition information is <http://ncacoach.inetnebr.com>

A position paper on Nutrition and Athletic Performance from the American Dietetic Association is available at [http://www.eatright.org/Public/Other/index\\_adap1200.cfm](http://www.eatright.org/Public/Other/index_adap1200.cfm)

The University of Arizona has info on *Nutrition, Exercise and Wellness* at <http://ag.arizona.edu/NSC/> Click on Cooperative Extension, then Sports and Nutrition *Food Power* (1991) a coach's guide to improving performance, provided by the Dairy Council.

The Okalahoma State University Cooperative Extension Service has two excellent publications, *Nutrition for Physical Activity and Athletics* and *Food and Fitness: A Winning Combination* available at their website. <http://fcs.okstate.edu/food/> Click on Publications; click on Fact Sheets and look for these titles on the list.

### **Background Information:**

Athletes have greater need for energy, fluid and some nutrients than nonathletes. The drive for peak performance has led to an emphasis on diet and dietary supplements as one way to improve performance.

The American Dietetics Association, Dietitians of Canada and the American College of Sports Medicine state in their position paper on Nutrition and Athletic Performance state that physical activity, athletic performance and recovery from exercise are enhanced by optimal nutrition. The following key points summarize the current energy, nutrient and fluid recommendations for active adults and competitive athletes from the position paper:

- ? During times of high-intensity training, adequate energy needs to be consumed to maintain body weight, maximize the training effects and maintain health. Low-energy intakes can result in loss of muscle mass, menstrual dysfunction, loss or failure to gain bone density and increased risk of fatigue, injury and illness
- ? Body weight and composition can affect exercise performance but should not be used as the sole criterion for participation in sports; daily weigh-ins are discouraged. Optimal body-fat levels vary depending upon sex, age and heredity of the athlete, as well as the sport itself.

### **Learning Activities:**

#### **Middle School Level/High School Level**

- ? Ask students to list all of the organized sports they are involved with or are aware of. Ask:
  - o Do athletes have different nutritional needs than nonathletes? Why or why not?
  - o Does the type of sport the athlete is involved in impact nutritional needs?
- ? Ask students to write out questions they have about nutrition and athletic performance by writing statements on strip of paper. Ask students to place the strips of paper in a basket. Address these questions after the students have completed the scavenger hunt.
- ? Complete the web-based *Sport Nutrition Scavenger Hunt*  
NOTE TO TEACHER: You may want to put this activity on a disk, CD or post on the web for students and create hyperlinks to each of the web pages listed.

- ? After students have completed the *Sport Nutrition Scavenger Hunt*, draw out the questions that students had about athletes and nutrition. Ask if they are now able to answer the question and discuss responses. Clarify any misinformation
- ? Complete the activity, *Jason's Training Menu*. Students apply knowledge of the food guide pyramid by assisting in meal planning for a student athlete.
- ? Research a sports related topic to present information to others in an appropriate information format (brochure, display, fact sheet, PowerPoint, news release, etc). Present these topics to the class and/or as part of a Nutrition and the Athlete Forum (see Extended Learning Activities). Possible topics include:
  - the benefits of water versus sports drinks
  - the dangers of dehydration and how to prevent it
  - creatine and other supplements
  - energy bars
  - carbohydrate loading
  - the vegetarian athlete
  - ergogenic products

#### **Extended Learning Activities**

- ? **Locker Room "Pop-Ups"** – Create "pop-ups" with nutrition information related to nutrition and the athlete and place on lockers, bulletin boards and walls in the school and visitor's locker rooms.
- ? **Nutrition and the Athlete Forum** – Host a forum to discuss nutrition and the athlete at the beginning of the school year for all athletes, parents and coaches. Invite health professionals (doctors, registered dietitians, etc.) from the area to address related topics. Create displays, posters and fact sheets to present to those in attendance.